



Ferula Asa foetida L CEOBCE ENCELMANN PAPERS MISSOURI BOTAMICAL GARDEN H. B. Wiggl. 1822 MISSOURI BOTANICAL GARDEN

Rus mich 11/ Belleville Fely 26 # 1880 My Dear his.

Your mote has piven me freat satisfaction and I now trouble for again. I sound a Empholis or two and a Cuscuta. I Junci. Mould you be kind enough to examine them if I should sendying a ref. 9 I believe that Prims Contas and Bankrians mut at the Bow Ring Pass in Lat 51°. I found the former Mucies as far eart as Little Marre Lake. It is very common west of the Rackries as far mosts as Lut 66° O. Banksians was form by me at Lake athabasea and south eastward to Lake Dupaine. The Picea's I know little about but purpose making a thorough investigations of the mountains species if

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I should be out mist reason. Should I send the former I shall send the specimens of Coniferes alser. The Euscitas are from hue and near Winnifey.

Nor I grows on dry proud on

the prairie. Nor 2 in low ground on

hue.

C. gmoni-Hofring your may see your way to name the Junei. a rather confiner my determinations. l'amains Thut Maconny. MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS

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13 2 2 Engelmann 385 30 moran 25 velor for som a parcel Jest mail mitte postal wholast The winder in some harte I fear for thering! P. mitis. I may premier by Is saying that the back of pines El Mu Dame Speens, orthers much " in tipperent instructs - owing De either to age (when the most L'important) on To Soil & locality. Eg 1. miles is not found night ( Sahnt me how - ( only one or her Small trees) but her miles off 3 when your strikes The clay land Dark is fa dull red or Cis Cirmamon colorer" 1 comes offin Halees - (9 mean in old trees) and when it scales, gives the In surface a flat look Fitter furnows Keing mor a fait.

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In The younger trees the back is 36 darker 1/1 Peeles much smalle. I suited your sh from Delawar come from a joing tree - or it mag have been an "old field" growth - who makes a vait to Benever I suspect, h - for d/commenter does in P. Toda .. 1', Clabra. The back of they from is absolutely deferent from 1, miles The colour is dull like a milles but still is of a different how . but I can't Tiscular il - I'my know it. The furnous an I Think closer - hut il never comes off un large blakes - only in small pinces of Therefore its surface is never flat, as in an old 7. miles. I havent been able to set a ship leaser of blaka from an out the same of meter so as to answer you austin quist 1 thekny - but I am suw I have been leaves from one her at Buck Hill more nigit of Threfees Than't from any P. mitis & Even saw. Leave y young blaka an however My soft 1 Smooth - that I sent you mitt ?, mulis of mas from a sapling. Wood. I can't telle your anything fundorgram og 7. milles an g am not sure that I even examined

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it. It think it is even used with the Conserventy u. when australes on Ell am handy - in even old field Lottly - ?! 1 my 1 feel, honas to I'm Sargent! I am ~ . glas to Ceam that he saw 1 reers-- niset P. Elletten in Ala or nos il 45 Ha? I can't at all ow han he hil nas hurstet to fisting with the Jung trees when less than 10 years" Z Le oct from there of 1. australes. There hit is a resemblance in The older softing - but the younger the lake bus flack-from the ferminating sus to the gent out and The greater the Difference ! How can a safting to feel in less, with an دسر a few Small ones - look like Ell wh is always (as in all Muff) hims Legglike a Small the in minister? w.

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autotrafis sherrs The tage the large way much pringer (while) seales \_\_ and also that The Ceaves are always The much longer. At least so it is here - don't tonom about Ha i ala. As som as you see the white husiching seed the bud you may be apresent it is aust - that of little is stop on meren so thick but Justaps longer always brown! So give there wrinkles to om Huns 1 hell nevan again mustake the me for the other. Berior, in a Sapling Cen on 12 beet high that y aust is always I think heavier i more noust than that of !. The Thickness of The tree - later when the brus get 20 - 25 best high this distingwishing mark is lost & Thurso. Blooming of Pines here. (Dut know anything about Ha a ala.) This spring the or rather This year (The Winter a spring) - The Pines Hormed Very carly. On The 1st of February a few trees y P. Elliotter Imping then made aments and of the 10th of Same month this was very general and now then Cast are try a showilles work the trees. On a bew trees

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and an one or that are recurring. The statement of the Sargent that P. the Tada blums 5-6 weeks before l'australes astourshes me ! It sont To it here! I have thement (as before states) That usually australis is a little ahead of Tilorow - hit not much. After a nor y 20 mile au the per men to Sav Riv , back it Ce E Seemes 70 mis that There was letter or Ex no or Deren This Dearn - That they The were a any blooming together \_ but & they are hardy vischarging pollen heiten han by on yet st. a single ament - so That I think I may write truth say g from (4) weeks a-hear, - cutainly L'at least 3 mels. Ludging from 35th young comes I am inclined to Es thule (I enclose one of each - fau specimens) 1. australes a ven little in L'advance - but d'am not certain. one reason why Port 5- may have mess. This mistates is - That. The aments The branches all over mit their bright of sellow or seemst sellow aments - whereas (6) The beautiful intres blue - violet aments of australis - historia as They are in the long of theek leaves - can hartly be seen. ! australes also does not bloom I think a make fruit with the same annual regulant of Too a Ellerthe and of Lam night in this - this may be one reason why australis over not spread with The Same gase on "lobbothy". There are not even year an many sees to germinate as mit toeto or Ell, - Some lean none at all I think. Perhaps freather heavenuts of The seed I may be another reason not so easily waster by strong winds. As regard the suggestion of fires killing unt australis I don't know aby a fire that will kill a young aust - she not kill a young Ell a Toesa! There must be come other reason. It is the the That there is muse "show" or leaves on aust when young The I have often Seen Them sprinting aust soint spread - Don't it in The next Elocalities? - higher up The country. \_? but I Too wh is inster orginally a swamp tree, aint it? It seems so!

I have seen it shread in two blaces in The sandy land ( its hupe home!) when D'évre can react it. Cant distinguist barte of aust from leda", yes! The oet by out trees of loos (primeral) on the bosters of swamps have a bull set back what a little distance does instat ver much resemble australes but This red colour is not clean & bright + lively like that of australis - it has a bnik-dust res look - but it may well he mustaken in the old trees on every swamps! In the Younger trees of tora ( set large enough ) the banks is cracked a grayish a douts - only the My oct trees show the reddish links We australis. Then our trees y læda also show excellent timber \_ 1/20 young of old field front show sappy pour timber. I! Statra - The timber of this tree is not used - or veg selvom - dont know much about it. I Think it is Coarse graines 1 hour. 13 The back of low of Ell a aust nomites, also, in younger trues is, allow - hardy much to distinguist Them. You can only melce a good tragnons in well grown rold trees. \* The back y oed trees of Mutes, wold twees of took is very similar.

Quercus. I have soalces & 8) chinging accome of 2, viviens wh 2 I sent zur a dag or two ago mil report later. 3 The two seerlings (not visions) I Think aw 2, aquatien \_ nos Sure. I sent two to see lengs of & the I Seech - near But Hill -I growing on the face y retet inside, I month how They stuck! I endow It the shells belonging to Them - new Saw Sarlings opBeech before. 3 develor 3 leares shi of 1, mites H- don't show 3 lears en mo? These from seme tree from wh I sent the sh in last haved -Some for them! & d'have Hauted The Calable Il ghose to introduce the tree hew. Co Well, I bear my A 253 I & Law tired you out - Talking & The Same things over - hit 1 I know you am hattent ofor = ? D= swing. Dut I am sleep A Stupier (chrome contr.) 150 Enmit got to her - blefows in the Et man isho inventer steek" you.
Thus trul rethby John Pinus Inhia Fray in aglethorp the faire Swamph 1860

I prover they in it 1990

Extract from a letter of Mm, I. I Lay of Savannah Ga

bearing date I anucery 24, 1875.

There is a species of Time, which I have named I process as it is the first to bloom, commencing as early as the 4th laurary in some years. The leaves are 243 in a sheath, and very leng (8-10); the cones avoid, chestrut-colored, polished, with a very slender opino visures competty from an enlarged tubercle, It is found aling the margins of severs in the low country and throughout South Honda, in semilar setuations, and along what are called "the Stacker" in the fine barrens. - Elliott, under the name of hetersphylla, makes it a vaniety of Fitæda, but his discription is pour, not with standing it abound on the plantation on the Ogeechee, which he formerly owned. Elliott represents it as growing never the mouth, of our fresh-water revers; so it does, but I have identified it as feer as 40 miles from Savannah on the C. [Charleston?] N.R . - The cone is altogether unlike that of I toda or any other that I have seen. The bank is necesty, if not quite, as smooth as that of To australis, ellechy ! And here I may mention that the last named was called to palus this by Hangenheim and not by Linn or Miller as some state. I have never detected I. sigida or Promitis in the low country. He have Paustraliseliche P. lada, L. P. serotina, Michy. S. glabra, Hall. P. squamoa, Hall a very characteristic species) and I process (if admitted): with all these I am perfectly familiar. Comes of V. glabra and P. Oquanus about the same soze, and having a close resemblance, but the bush of one clear and The smaller branches quite smooth, and of the other very scally and rough



learn about the same length by 2 and 3, the fermer growing in nich hammocke, the latter in dry soils. When the hammoch bordens on and soils I have seen them quite near to each other in Florida, presenvey Their distriction characters, I should have added that the cenes of T. Equanisa are frequently in christin and very numerous. I send you Waltur charactus of the two species & Micheaux I mites [ Which I omit ! Observe the expression above [ dichcaus] teasules mulices". What do you think of it i Does he mean that the mucero is absent? I saw such a cone at Ford-town in Decatur Co in the possession of one of my pupils there, but could never find the tree from which it was obtained , the spines had evidently not been removed by violence. The cone was nearly the size and shape of a Guinea hons egg. What do you make fit. How is it that I have never been able to identify any tree as I mitis, if found abundant in the low country? I have always supposed it to be the ohest-leceved species of the up-country, of which I have nodistinct Knowledge, having seen it in early life only. The Staties are Leays. Fray published his I. process, in the Oglethap Med. Journal, then published at Savannah, as I. dubia now spec in the Cutalogue Savannoh Hants, in Och. 1860. But now no one will feel any divine to interfere with your well earned ifrutation and I only copy the foregoing in the hope that the penisal many tilerest an idle moment. A. W Chapman Manh 17 1X82

Penglish Jean agethy this face Comment With

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
Vinus Taeda Z. Loblolly Pine. Old-field Pine. Leeanes in Threes, to to 10 mostly 3) inches long, clarke green, flatty conver on the back, and heeled on the middle of the when side, edges and heel minutely but shorply serrulate; Sheath's dark gray or blackish 5 to 7 lines long, subentire; cones large, B lo 5 inches long, oblong-on-oid or oblong-conical, deflested, dolitary, or in clusters of 2 (often 2) to 4, The scales very Thick at the ends and cornect with a short incurred por Abraight = rigid, Capering Aprine. A tall tree, 80 to 100 feet high in close woods, but in open situations lower with large Spreading branches; trunk 2 to 3, rarely 4 feet in obiameter, with very thick and furrowed barks, rough and blackish on young on sap-wood trees, but on heart-wood trees, Amonther and brownish from the peeling off of the outer scales, and broken into broad plates; a character well understood by the Woodman. Branchlet Thick 13 to 5 lines in diameter and very rough with the persistent lases of the leaf-bracets. Sterile aments 1 to 2 inches long, densely clustered, light reddish. Comes generally about half as long as the nigid, flattish leaves. A sparingly resissores but valuable pine, confined to The wet or sandy lower districts along the coast from the doublem part of New-castle county; Delaware to eastern Tesas. The most inland localities being I tone mountain rear Atlagata, Georgia and Camden in Arhansas. The most abundant and with the exception of Pinus Elli otter, perhaps the largest prim of the Southeastern states. Messongo, Arromar Co, Virginia Ellis Mears

Manh 1882.

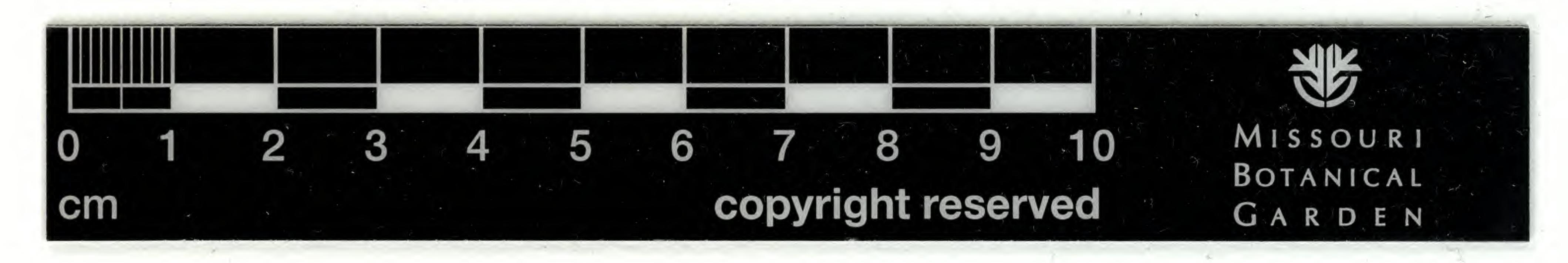
A hare, most doubtless, included some generic sharacters; such for instance, as the reel and derratures of the leaves. I find the spines of the comes more generally straight man. They are horberer of when incurred agreeing more with Chap-

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Kens Sept 1269 Pins lophosperme Limbly - gand. Chron. 1860 p. 46. = Torreyan all by Whole and sent early - 1860 republished i gooden Pinetur, suppl. 1862 p. 69 1.1.

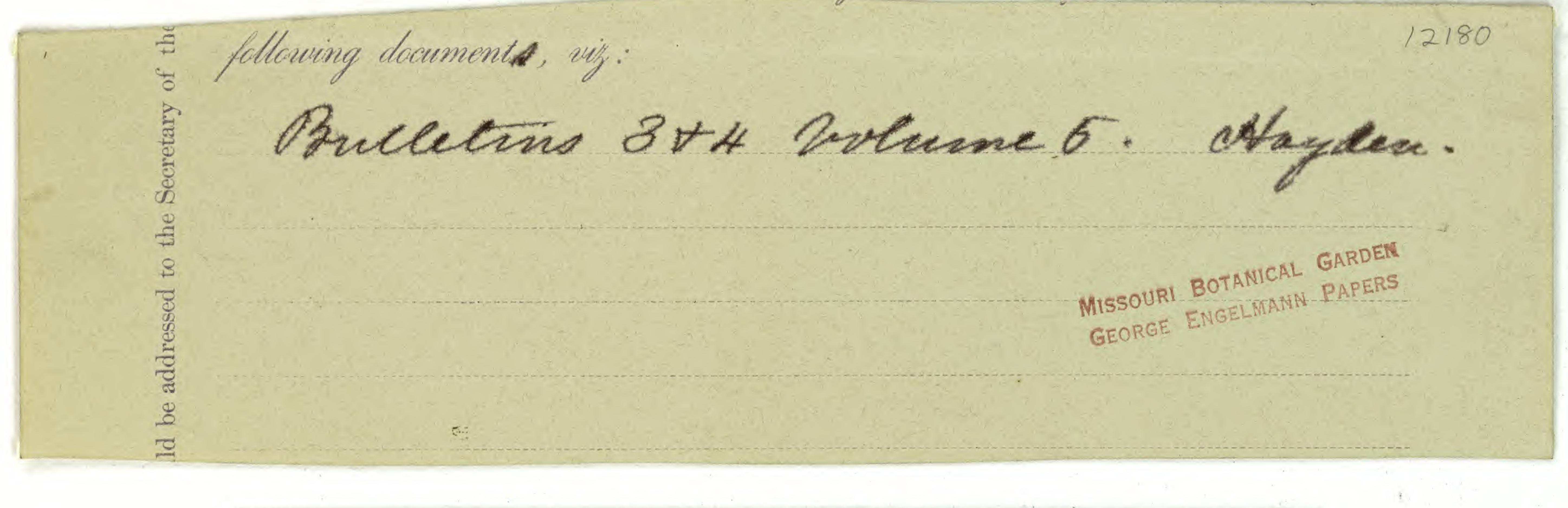


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GEORGE ENGELMANN PAPERS



Charles A Jana & Sargent, NJ. March 22. 1811 Luche I for 3 prives. I, at Low Siego de les Barrons in The Willa Viella Abajo 2, Isle of Pines 2 speries, Pino Olanco and Pino Jea - but the inhabitants can not dry wash is which. They call do & Alfredo Morales in Matanjas says that there is ong Pinns orribeathlis and P. Tack on the island.







Tims glabon, Walt is a good speries but has been confounded with Times Iquenosa thet which I am setisfied is = Pinns mitis mithy.



J. B. Young & Co. SUCCESSORS TO Pott, Young & Go., COOPER UNION, FOURTH AVENUE, Dr. Seo. Engelmann MISSOURI BOTANICAL GARDEN GEORGE ENGELMANN PAPERS



A. H. Custin with to layed April 4 1881: Pinus glabra, formi before by me tak Chattakochee i cashu Jospie x S.C., we seen aboutly i rish Hammocks around Joines ville He. 2 i feet d'en and own 100 f high. Frees loaded with open comes .- near them Or clause Sain Ith to be aform of glabon hventy five mil last of Jackson ville an extensive growth of Ipmore Pine" on a poor sandy vidge \_ with open comes, or few trees only the comes were closed also dure the their of you slowlar trees, chammeler the of clease, mere outlings often with Corres





Pinus rigid mill	30-70' high, come	1-3/2 inh	Cen 3-5 the Con
	30-50	2-3	3~5 G. J.
	15-40 day ylocanotte		
	75-40 Payrelownstt		1/27 Michay  Sylve  A-6 Carott  Navenil  2-4 Rottler  3-6 Delawant  5-8 Chap
		2-4	4-6 Carolf
	and Caring.	2-3	3-5 Chaping
			3-6 Delawand
	small tree	2-3	
	40-50	2/2	527 Custing
	38-40	2/2	5-6 Michay
	30-40	3-4	6-8 Ellerth.
	up to 80		
	Coffy tree	3-5	6-10 Chapa
	50-100	3-5	6-10 gray
	100 Canest, souther fr	2-5	6-10 Ellot
	50-70		6-10 Custing
	80 on more		6 Michael
P. hetensplylle	von Carze		225° ECC &
Ellette ilen.	100-130	4-4/2	23 8-9 Engelien
samp-foine 1.C.	150 -170 ×4-5		Centri From Arfin
9. australis	Tree		10-15 Chan
	-100	6-10	10-15 Chapmin 12-18 Eller of
	-70 and much Cargins	7-8	12 Michay
6-	-70 - høgsen	6-8	10-15 Centh;
60-	70	7-8	10-12 Augus)

